

**CAS** 7439-97-6

**Substance name** Mercury & mercury compounds

---

### **Toxicity**

Mercury exists in three forms that have different properties, usage, and toxicity. The three forms are called elemental (or metallic) mercury, inorganic mercury compounds, and organic mercury compounds. Methylmercury and metallic mercury vapor are well known neurotoxicants. Mercury and mercury compounds are listed as developmental hazards by the European Union and the state of California.<sup>1,2</sup> Animal and human evidence is especially strong for developmental effects of methylmercury and the developing child is considered the most sensitive life stage for exposure.<sup>3</sup> Mercury compounds are listed as possible carcinogens by authoritative sources.<sup>2,4,5</sup>

### **Exposure**

Metallic mercury is used in some thermometers, dental amalgams, fluorescent light bulbs, some electrical switches, mining, and some industrial processes. Inorganic mercury compounds are used in some industrial processes, in the production of other chemicals and in cosmetics in some countries for skin-lightening soap and creams.<sup>3</sup> Organic mercury compounds, such as Thimerosal and phenylmercuric acetate, are used as preservatives in pharmaceuticals.<sup>3</sup> Metallic mercury has been found in imported jewelry marketed to children in WA State. It is also in button-type batteries used in many children's toys.<sup>6</sup> The Center for Disease Control and Prevention found widespread detections of both organic and inorganic mercury in biomonitoring the general U.S. population.<sup>7</sup>

### **References**

1. European Commission, Joint Research Centre, Institute for Health and Consumer Protection. European Chemical Substances Information System (ESIS) file for Mercury <http://ecb.jrc.ec.europa.eu/esis/>.
2. California Office of Environmental Health Hazard Assessment. List of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. Feb 5, 2010. Listed as mercury and mercury compounds. [http://www.oehha.org/prop65/prop65\\_list/files/P65single020510.pdf](http://www.oehha.org/prop65/prop65_list/files/P65single020510.pdf).
3. Centers for Disease Control and Prevention (CDC), Fourth National Report on Human Exposure to Environmental Chemicals, December 2009. [http://www.cdc.gov/exposurereport/data\\_tables/](http://www.cdc.gov/exposurereport/data_tables/).
4. WHO, International Agency for Research on Cancer (IARC) Agents Classified by the *IARC Monographs*, Volumes 1–100 (listed as Methylmercury compounds). <http://monographs.iarc.fr/ENG/Classification/ClassificationsAlphaOrder.pdf>.
5. U.S.EPA, Integrated Risk Information System (IRIS). File for Methylmercury (Last revised 1995). <http://www.epa.gov/iris/subst/0073.htm>.
6. Interstate Mercury Education & Reduction Clearing house (IMERC) database of mercury in consumer products. Accessed July 2011. <http://www.newmoa.org/prevention/mercury/imerc/notification/>.
7. Caldwell KL, Mortensen ME, Jones RL, Caudill SP, Osterloh JD. Total blood mercury concentrations in the U.S. population: 1999–2006. *Int J Hyg Environ Health* 2009; 212:588-598.